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## Keeping NIH Peer Review Robust in Difficult Times



One of the key themes at the May 6, 2013, meeting of [CSR's Advisory Council](#) was how to keep NIH peer review robust in difficult times.

CSR Director Dr. Richard Nakamura summed up his comments to the council: "Due to the sequester and rising numbers of applications, NIH has had to significantly cut funding, and its success rates are an historic low of 16 percent. Applicants, reviewers and

NIH staff are unsettled because everyone knows researchers facing the devastating closure of labs with promising lines of research."

"There is so much wonderful science being proposed now," he continued. "The number and quality of research proposals going unfunded have never been higher in the 67-year history of NIH grants. During many of these years, much higher success rates allowed U.S. science, health and economy to [flourish](#)." He noted that since 2000, success rates for NIH grant applications have fallen nearly 50 percent.

"This situation has made it difficult for CSR and our reviewers," said Dr. Nakamura, "because for NIH Institutes and Centers to make informed funding decisions, our reviews need to finely discern the relative merits of applications in the top 10-15 percent -- the applications reviewers have judged to have tremendous merit."

## What We Can Do With Peer Review

"I believe we can do better in gathering the knowledge and best judgments of our reviewers" said Dr. Nakamura. "To this end, I have been working with my

colleagues<sup>1</sup> at NIH as well as with members of our advisory council.” He and council members discussed three ways of doing this:

- **Provide New Guidance on Scoring:** As paylines and budgets contracted, reviewer scores have compressed around the perceived funding range, leaving NIH Institutes and Centers in the difficult situation of having to discriminate between applications that got the same scores. NIH Office of Extramural Research (OER) has given reviewers [updated guidance](#) on scoring applications so they can provide reviews that will better help the NIH Institutes and Centers make funding decisions.
- **Explore Ranking of Grant Applications:** “It might be better if reviewers also ranked applications,” said Dr. Nakamura, “because it is hard to have perfect pitch and judge applications by an abstract ideal.” He said CSR will host a public meeting to discuss the pros and cons of ranking grant applications, possibly as a supplement to traditional scoring.
- **Develop a Science of Peer Review:** CSR is working to be more scientific in evaluating the quality of peer review and assessing CSR’s practices and programs. Dr. George Chacko Director of CSR’s Office of Planning, Analysis and Evaluation told council members how CSR is developing infrastructure, datasets and standard protocols to perform these assessments and collaborate with academic researchers. He discussed five areas for evaluating peer review outcomes:
  - Design of study sections
  - Referral of applications to study sections
  - Recruitment of reviewers to study sections
  - Management of study sections
  - Selection of applications with the greatest potential for impact

## **CSR Welcomes New Council Members**

- [Dr. Roberta Diaz Brinton](#), University of Southern California, Los Angeles (2013)
- [Dr. Susan Essock](#), Columbia University, New York City (2013)
- [Dr. Pamela Hammond](#), Hampton University, Hampton, VA (2012)
- [Dr. Michael Hollingsworth](#), University of Nebraska, Omaha (2013)

**Learn More About CSR’s Advisory Council [online](#).**

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<sup>1</sup> Dr. Nakamura is working closely with Drs. Sally Rockey and James Onken at the NIH Office of Extramural Research; Dr. James Anderson and George Santangelo at the NIH Division of Program Coordination, Planning, and Strategic Initiatives; and Dr. George Chacko, CSR Office of Planning, Evaluation and Analysis.

## What's So Special About NIH Peer Review?



"To maintain our edge, we've got to protect our rigorous peer review system and ensure that we only fund proposals that promise the biggest bang for taxpayer dollars . . . that's what's going to maintain our standards of scientific excellence for years to come."

--President Obama, April 29, 2013

"Leaders from around the world understood what President Obama was saying when he recently said these words to mark the 150th Anniversary of the National Academy of Sciences," said CSR Director Dr. Richard Nakamura.

"There has been a surge in international interest in NIH peer review," he continued. "In the last few years, CSR has responded to requests from many countries seeking to learn from us, including Armenia, Australia, Canada, China, India, Italy, Japan, Kazakhstan, South Korea, and Poland."

Foreign officials and others are so interested in what we do because they know how NIH-funded research has dramatically [advanced](#) U.S. science, health and economics. When Congress [studied](#) the impact of NIH research in 2000, it concluded that 70 percent of major drug discoveries were developed or made possible by NIH research.

To help increase the understanding of NIH peer review and its success, CSR worked with the NIH Office of Extramural Research to develop a document that explores the core values of NIH peer review: "[NIH Peer Review: Grants and Cooperative Agreements](#)."

### Core Values of Peer Review

Anyone who studies peer review soon learns that success depends on more than recruiting reviewers and giving them applications to review. The new document explains how you need policies and procedures guided by core values that ensure the process works:

- Expert assessment
- Transparency
- Impartiality
- Fairness
- Confidentiality
- Integrity
- Efficiency

## Culture of Peer Review

"If there is one element of success that's difficult to reproduce, it is that we have developed a culture of peer review in the U.S.," said Dr. Nakamura. "Reviewers and applicants here understand their success and the future of science and health depend on robust and fair peer reviews, so the core values of peer review have become core beliefs for the scientific community."

View [NIH Peer Review: Grants and Cooperative Agreements](#)

## Update on Reviewer Confidentiality and Conflicts



Sometimes reviewers will ask their Scientific Review Officers (SROs) if it is OK to show an assigned application to one of their colleagues. They say they could give a better review if they could consult a colleague. We are glad they ask because our SROs can tell them what is and is not permitted.

Of course, reviewers sign a confidentiality agreement before they are permitted to view their assigned applications that prohibits them from sharing an application with any unauthorized person and discussing the review with anyone – particularly with the applicant. Reviewers are asked to report to their SROs if they are ever asked to breach their confidentiality agreement.

**Under very limited circumstances, NIH will give permission** to a reviewer to show a colleague one of his assigned applications. The SRO would have to agree that there was a compelling reason for doing this, and before the colleague could look at the application, he would also have to sign a confidentiality agreement and not be in conflict with the application.

## NIH Has Made It Easier for You to Follow the Revised Conflict of Interest Policy

NIH recently issued a revised policy for managing conflicts of interest, and the appearance of a conflict in the review of NIH grant applications: [NOT-OD-13-010](#). To make it easier for reviewers to follow the revised policy, NIH posted new decision charts for [Federal](#) and [Non-Federal](#) reviewers.

## New Scoring Guidance for NIH Reviewers

Scientific Review Officers (SROs) are sharing with their reviewers updated guidance on [scoring research grant applications](#), [training/career award grant applications](#) and [scoring in general](#). They are doing this to help reviewers better communicate their assessment of the top tier applications by spreading their scores and increasing their focus on the overall impact of the proposed research based on the criteria.

## The Value of Spreading Scores



The vitality of NIH peer review depends on the dynamic use of our scoring system. When reviewers take advantage of the full range of scores, they can better communicate critical judgments that allow NIH to make better informed funding decisions.

Study section scores began to compress around the perceived funding range not long after NIH started using the new 1-9 scoring system in 2009. When we looked at preliminary scores from the last review round, we saw reviewers gave 17 percent of their applications an overall impact score of 2 despite the fact that this score represents 5 percent of the scoring range if scores were spread in a normal curve.

NIH Institutes and Centers (ICs) have a difficult time gauging reviewer assessments when so many applications receive exceptional scores, particularly when study section members all assign a “2” to an application.

## Keeping Reviews Fair

Spreading scores means researchers who submit applications that are discernibly better are more likely to be funded. It is what all applicants hope for when they craft their applications.

Some CSR study sections started following the new scoring guidance during the last round. Those who earlier produced compressed scores succeeded in spreading their scores. To ensure that applicants were treated fairly, CSR recalculated the [percentile](#) base for these study sections and we also recalculated the “CSR ALL” percentile base, which is frequently used for normalizing scores assigned by special emphasis panels. NIH Institutes and Centers usually look at percentile scores when making funding decisions. Ordinarily, we calculate the percentile for a study section by using as a base the scores assigned by a study section in the current and previous two review rounds.

## CSR Tips to Make Sure Your Application Isn’t Late



Hundreds of applicants each round get an unhappy surprise: They hit the submit button right before the deadline, and their grant application is rejected with no time left to fix any mistakes.

“This is the last thing we want,” said Dr. Cathleen Cooper, Director of CSR’s Division of Receipt and Referral. “We know these researchers spent weeks

and even months collecting preliminary data and refining their applications for research that could one day make a big difference.”

“It’s important to remember that submitting an application isn’t like submitting an order for an e-book from an online retailer and having it show up in your e-reader in 15 seconds,” said Dr. Cooper. “It is a complex process with many checks and validations at multiple stages during the submission process and things can go wrong.”

**To help ensure your application sails through the submission process and makes its way to peer review,** CSR developed a list of things you should know and always do based on the problems we see applicants have all too frequently: [CSR’s Tips to Make Sure Your Application Isn’t Late](#).

“We have to have some ground rules to keep the process fair for everyone,” said Dr. Cooper. “By making these rules more transparent, CSR and the NIH Office of Extramural Research hope applicants can avoid trouble.”

## **New User Guide for the Internet Assisted Review System**



A much improved version of the [IAR for Reviewers User Guide](#) was recently released by the NIH Office of Extramural Research (OER).

The new guide represents an extensive update from the previous version, circa 2007. It covers the changes that came out of the 2009 Enhancing Peer Review initiative, including the new scoring scale, criterion scores, etc. The new guide incorporates more helpful screen shots and covers key reviewer

actions: accessing IAR, submitting critiques and scores, obtaining CD passwords, and signing the Conflict of Interest forms.

OER is working to make the IAR user guide available as online screen help, directly accessible in digestible chunks of information from several screens within the IAR module itself. This should be available to reviewers sometime in the next two months. In the meantime, OER has made the online version available to you as a link: [IAR for Reviewers Online Screen Help](#). Note that the content of both the user guide and online help are identical; the latter is easier to navigate and search.

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